

REMARKS

Applicants thank Examiner Cynthia Hamilton for the helpful discussion of December 19, 2002. The subject of the discussion is set forth in detail below.

Applicants thank the examiner for indicating that claims 6-8, 14, and 19 would be allowable if rewritten in appropriate independent form (Office Action, page 7, lines 7-9). Applicants thank the examiner for indicating that all secondary references have been dropped except for U.S. Patent No. 4,156,035 ("Tsao") (Office Action, sentence bridging pages 6-7).

Claims 1-8, 10-11, 13, 15-16, and 20 are under examination.

Claims 2-5 have been amended. No new matter has been added.

1. The Rejection of Claims 2-5 Under 35 U.S.C. § 112, 2nd Paragraph

The rejection of claims 2-5 (Office Action, paragraph bridging pages 2-3) has been obviated by deleting all but one range in each claim.

2. The Rejection of Claims 1-5, 10-11, 13, 15-16, And 20 Under 35 U.S.C. § 103(a)

Claims 1-5, 10-11, 13, 15-16, and 20 stand rejected under 35 U.S.C. § 103(a) over WO 99/50711 ("Melisaris WO") or U.S. Patent No. 6,136,497 ("Melisaris U.S.") in view of Tsao.

a. *Melisaris U.S.*

Melisaris U.S. and the presently claimed invention were commonly owned by or subject to an obligation of assignment to, the same organization at the time the present invention was made. Melisaris U.S. is thus not prior art. 35 U.S.C. § 103(c).

b. *Melisaris WO In View Of Tsao*

Applicant do not admit that Melisaris WO is prior art and reserve the right to swear behind this reference by filing a declaration under 37 C.F.R. § 1.131.

The Office recognizes that Melisaris fails to disclose a composition that omits free radical initiators (as recited in present claim 1) while containing component c) “a (meth)acrylate compound having at least one hydroxy group” (Office Action, sentence bridging pages 3-4). The Office applies Tsao for its disclosure of aromatic onium salts polymerizing a mixture of epoxies and acrylates (Office Action, page 4, lines 14-17). The Office concludes that “substitution of one compound known to perform the same function for another given in the prior art is held *prima facie* obvious” (Office Action, page 4, lines 18-20).

The Office must consider all the evidence and reconsider the obviousness rejection once Applicants present rebuttal evidence to traverse an asserted *prima facie* case of obviousness:

When an applicant submits evidence, whether in the specification as originally filed or in reply to a rejection, the examiner must reconsider the patentability of the claimed invention. The decision on patentability must be made based upon consideration of all the evidence, including the evidence submitted by the examiner and the evidence submitted by the applicant. A decision to make or maintain a rejection in the face of all the evidence must show that it was based on the

totality of the evidence. Facts established by rebuttal evidence must be evaluated along with the facts on which the conclusion of obviousness was reached, not against the conclusion itself. In re Eli Lilly & Co., 902 F.2d 943, 14 USPQ2d 1741 (Fed. Cir. 1990).
M.P.E.P. § 2141 (8th Ed. 2001).

Applicants traverse the rejection, because the evidence as a whole indicates that the invention as claimed was non-obvious over the art of record. Specifically, it would not have been obvious to modify the compositions of Melisaris WO by (1) introducing a hydroxy-containing (meth)acrylate from the general disclosure of Melisaris WO, and (2) removing the radical initiator based on Tsao's comparative examples.

First, Melisaris WO never uses a (meth)acrylate compound without a radical initiator, as the Office recognizes (Office Action, page 4, line 8).

Second, Melisaris WO shows no particular preference for hydroxy-containing (meth)acrylates (Melisaris WO, page 17, second paragraph) and provides no examples containing hydroxy-containing (meth)acrylates (see Example 1, page 35, line 5, and the definition of "Base Resin" on page 34, lines 5-7). Melisaris WO does not disclose what result one could expect to achieve by selecting a hydroxy-containing (meth)acrylate.

Third, Tsao discourages omitting the radical initiator. The formulations in Tsao that omit the radical initiator are comparative examples only. Tsao discloses that "appreciably thicker cure" results when a radical initiator is included (column 6, lines 52-55). This is shown by comparison of the data for formulations 3-4 and 5-6 in Table I (column 6). Formulations 3 and 5 have no radical initiator, while formulations 4 and 6 do (2,2-dimethoxy-2-phenyl-acetophenone). Tsao also discloses that a harder film coating results when a radical initiator is included (column 7, lines 22-25), based on the data for

formulations 3 and 4 in Table II (column 7). A person of skill in the art would recognize that omitting the radical initiator is undesirable.

Finally, the present specification contains comparative data that shows surprising results for compositions that include a hydroxy-containing (meth)acrylate while omitting the radical initiator. Surprisingly, Example 2 with no radical initiator provides green strength (Flexural Modulus = 1363) after 10 minutes that is an order of magnitude larger than that for Example 1 (Flexural Modulus = 35) containing radical initiator. Tsao suggests that omitting the radical initiator would provide a final product that is weaker. Surprisingly, however, Examples 1 and 2 show the opposite result.

The Office noted that Examples 1 and 2 use different amounts of cationic initiator (Office Action, page 5, lines 15-16). However, the total percent by weight of initiators for Examples 1 and 2 is identical (2.0). And the molecular weight of the cationic initiator (UVI-6974) in Examples 1-2, 4, and 8 is far higher than that of the radical initiator (I-184). One would expect that analysis based on equivalent weight would show that a given per cent by weight of radical initiator should be replaced by a relatively larger percent by weight of the cationic initiator for a fair comparison. Here, Applicants have found surprising results where cationic initiator is replaced by an equal or smaller percent by weight of radical initiator.

Comparing Examples 4 and 8 also shows surprising results when omitting the radical initiator. Example 4 contains 1.8 percent by weight of total initiators, where 0.8 thereof is cationic initiator UVI-6974 and 1.0 thereof is radical initiator I-184. Example 8 is an identical composition to Example 4, but with 1.2 percent by weight of cationic initiator UVI-6974 and no radical initiator. Example 8 thus contains far less total initiator than Example 4. Surprisingly, the green strength after UV postcure for 10, 60, and 90 minutes yields results for Examples 4 and 8 that are comparable. A person of skill in the

art with Tsao in hand would expect significantly inferior results with Example 8. Even more surprisingly, after testing water resistance by soaking for 14 days, Example 8 provided results a flexural modulus ("FM @ 14 days") that is significantly superior to that of Example 4.

Melisaris WO and Tsao provide no basis for a person of skill in the art to expect the results that Applicants have found. Only hindsight could lead to a conclusion of obviousness. However hindsight is not permitted in an obviousness analysis. "The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination." M.P.E.P. § 2143.01 (citing *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990)). The Melisaris WO and Tsao references do not provide the required suggestion to modify the Melisaris WO composition by both selecting a hydroxy-containing (meth)acrylate and removing the radical initiator.

For the reasons presented above the evidence as a whole indicates that the invention as claimed is non-obvious over the art of record. Applicants request that the Office withdraw the rejection.

3. Rejoinder Of Claims 17-18

"[I]f applicant elects claims directed to the product, and a product claim is subsequently found allowable, withdrawn process claims which depend from or otherwise include all the limitations of the allowable product claim will be rejoined." M.P.E.P. § 821.04 (8th Ed., 2001).

Claims 17-18 are method claims that depend from claim 1. If the Office considers claim 1 allowable, the Office must rejoin claims 17-18.

4. Conclusion

The amendments herein raise no new issues and place the case in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.


The Examiner is invited to contact the undersigned by telephone if necessary.

Please charge or credit all fees as needed to Deposit Account No. 19-0741.

Respectfully submitted,

Date 24-Dec-2002

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MARKED UP VERSION SHOWING CHANGES MADE

Below is the marked up amended claims:

2. (Amended) A composition according to claim 1, which contains [50 to 80, preferably] 60 to 80[, more preferably 65 to 80] percent by weight of component a).
3. (Amended) A composition according to claim 1, which contains 0.5 to 6[, preferably 0.5 to 3, more preferably 1.0 to 1.5] percent by weight of component b).
4. (Amended) A composition according to claim 1, which contains [5 to 25, preferably 7 to 20, more preferably] 10 to 15 percent by weight of component c).
5. (Amended) A composition according to claim 1, which contains [5 to 40, preferably 7 to 35, more preferably 10 to 30, most preferably] 12 to 20 percent by weight of component d).